



SNS COLLEGE OF TECHNOLOGY

Vazhiampalayam, Coimbatore-35

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DEPARTMENT OF CHEMISTRY

**COURSE NAME : 23CHT101- ENVIRONMENTAL SCIENCE AND
SUSTAINABILTY**

I YEAR / I SEMESTER

UNIT : 4. ENERGY RESOURCES

TOPIC : 4.GEOTHERMAL ENERGY



BRAINSTORMING WITH RECAP

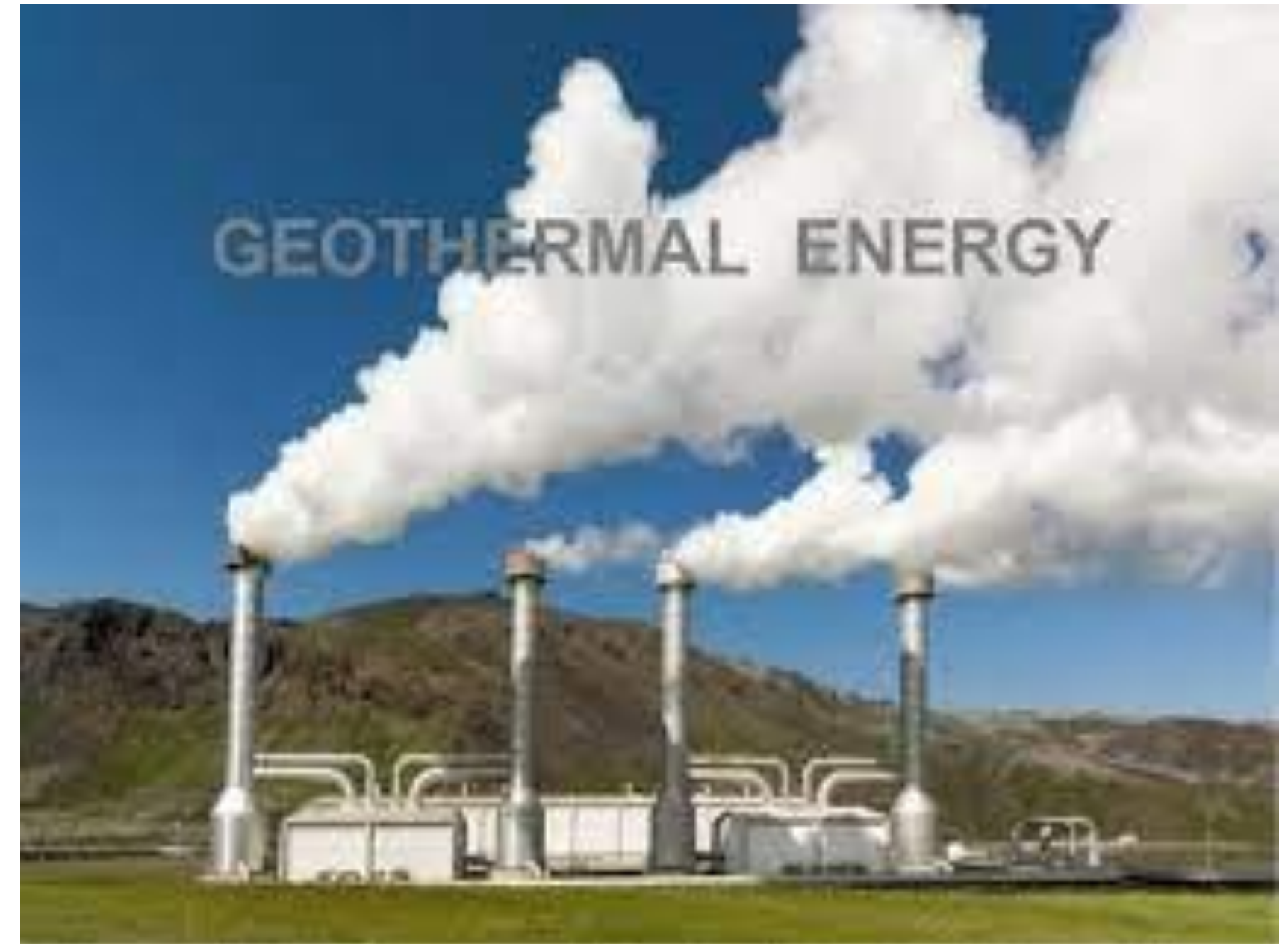




INTRO



- Kernel of the earth is in the form of molten of metals, sulfur etc. with very high temperature. This heats the upper surface of the earth above it.
- So the temperature and pressure increase as we move down the earth's surface.
- The energy harnessed from the high temperature present inside the earth is called geothermal energy.





NATURAL GEYSERS



- Natural geysers: In some places, the hot water or steam comes out of the ground through cracks naturally in the form of natural geysers.





ARTIFICIAL GEYSERS



- Artificial geysers: In some places, we can artificially drill a hole up to the hot region and by sending a pipe in it, we can make the hot water or steam to rush out through the pipe with very high pressure.
- Thus, the hot water or steam coming out from the natural or artificial geysers is allowed to rotate the turbine of a generator to produce electricity

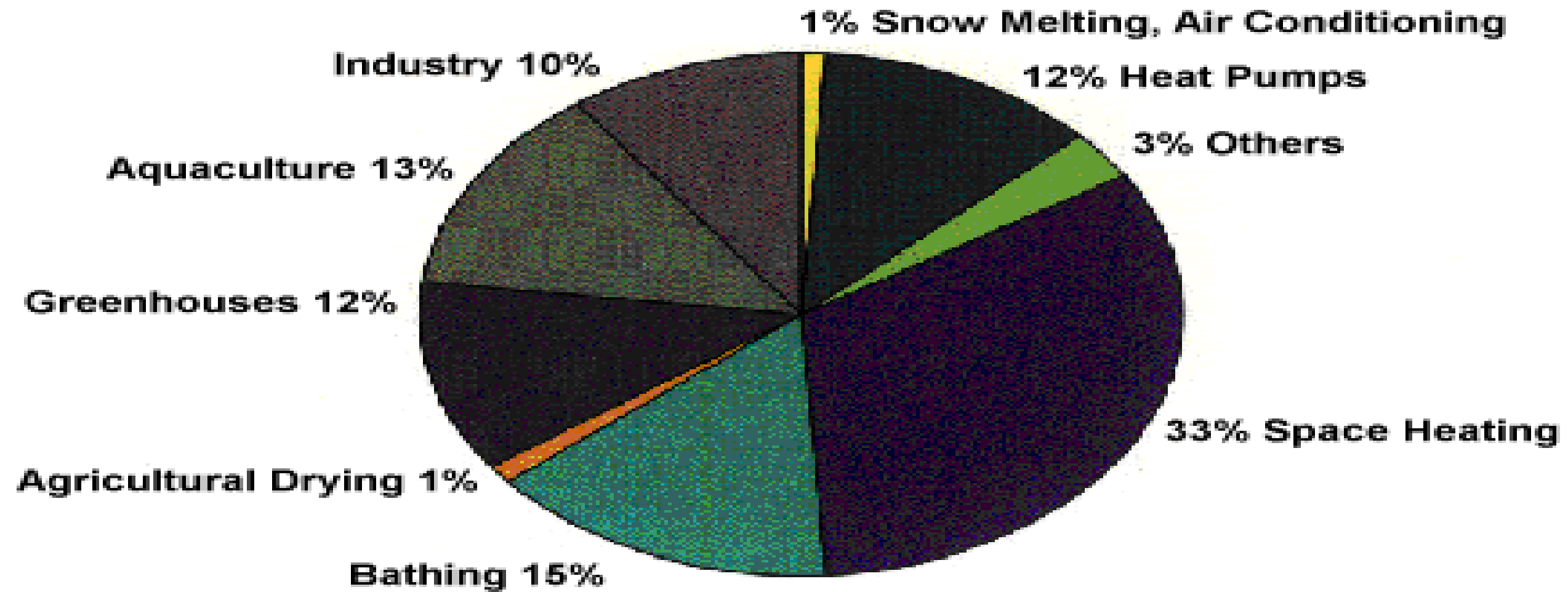




GEO THERMAL ENERGY-APPLICATIONS



Direct-Heat Uses





Activity



GEO THERMAL ENERGY-ADVANTAGES



Advantages



1. Considered environmentally friendly and does not cause significant amounts of pollution.
2. Geothermal reservoirs are naturally replenished and therefore renewable
3. Massive potential – upper estimates show a worldwide potential of 2 terawatts (TW).
4. Great for heating and cooling – even small households can benefit.
5. Harnessing geothermal energy does not involve any fuels, which means less cost fluctuations and stable electricity prices.
6. Small footprint on land – can be built partially underground.
7. Geothermal energy is available everywhere



GEO THERMAL ENERGY-DISADVANTAGES



DISADVANTAGES OF GEOTHERMAL ENERGY

- Only built where there is hot water
- Can sometimes be too deep
- Can not be moved
- Can suddenly stop working
- Hazardous chemicals



GEO THERMAL ENERGY -SIGNIFICANCE



1. The power generation level is higher for geothermal than for solar and wind energies.
2. Geothermal power plants can be brought on line more quickly than most other energy sources.
3. Geothermal energy is effectively and efficiently used for direct uses such as hot water bath, resorts, aquaculture and greenhouses.



ASSESSMENT



List out the various uses of solar energy



SUMMARY



REFERENCES



1. Dr. A.Ravikrishnan, Environmental science & Engineering” Srikrishna hitech Pub. Co. Ltd,2013.
2. G.Tayer Miller :Environmental Science”, Cenage Learning India Pvt Ltd, 2011.
3. Benny joseph, “Environmental science & engineering” Tata McGraw-Hill.Pub.Co.Ltd. New Delhi.2009.